Refinery LPS Bulletin – Reliability

F-8007 Flame-out

IMPACT ERM: 8391

Location: Pascagoula Reformate Splitter Unit (RSU) - 80 Plant

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Burner inlet air register handle

Burners – normal operation

Tenets Violated:

8) Always address abnormal conditions
9) Always follow written procedures for high risk or unusual situations.

IIF Message:

Exercise Stop Work Authority

Incident Description : February 22, 2011

Reformate Splitter Unit (RSU) Furnace F-8007 is a new Ultra Low NO_X furnace started up as part of the Pascagoula CCR project. During a plant restart, cold feed was established too quickly while F-8007 was on Cascade (auto temp control) causing the furnace to increase firing and bog due to lack of air. The Operators took the correct moves to cut fuel gas and open the stack damper. Subsequent miscommunication between the inside and outside Operator resulted in the air registers being closed too far, snuffing the fires in the furnace. Fuel gas was routed to the furnace in a flame out condition for over an hour before Operations recognized the fires were out, safely shutting off fuel and purging the furnace. This was an environmental score card event and a serious process safety near loss.

Investigation Findings:

1) Stop work authority was not exercised when it was realized that the appropriate F-8007 start up procedure was not posted to the web.
2) Miscommunication between inside and outside Operators resulted in the inlet air register being closed too far causing flame out.
3) The priority of environmental alarms relative to safety alarms during startup was not understood. Adjusting the furnace to meet the new refinery NOX regulations is inconsistent with safe operation of the furnace during start up.
4) Training on new burners was inadequate.

Lessons Learned / Business Practices:

1) Need an L&D process for verifying that all procedures have been received from projects and made available to Operators.
2) Clear communications between inside and outside Operators on actions to be taken is critical.
3) Identification of how equipment operation will change from what Operators are familiar with is key when developing training.

While not directly contributing to this incident, the following additional Lessons Learned / Business Practices are also noted:

1) Operating procedure Consequence of Deviation tables were incomplete and formatting inconsistency was noted.
2) Personnel involved in signing off on pre-startup safety reviews (PSSR) need to understand the expectation that they verify that required items are fully complete.
3) Project PHA/SOA recommendations identified as having an HES risk of 5 require long term action and need to be verified as mitigated prior to startup.

Recommendations:

1) Emphasize Stop Work Authority expectations.
2) Review this bulletin with furnace Operators, project personnel and personnel involved in signing off on PSSR to share learnings.
3) See complete incident investigation report for all detailed findings and recommendations (attached in IMPACT ERM LI# 8391)